

Notice of Allowability

Application No.

10/538,510

Examiner

Jerry T. Rahll

Applicant(s)

MATSUMURA ET AL.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendment received 18 September 2007.
2. ☒ The allowed claim(s) is/are 12, 13, 17-20, 30 and 31.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 12/3/07; 9/19/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

M. R. Connelly-Cushwa
MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER

12/10/07

Jerry T. Rahll
JERRY T. RAHLL

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
2. Claims 12-13, 17-20, and 30-31 are allowed. Independent claims 12 and 17 describe an optical fiber fusion spliced GRIN lens having a numerical aperture with the claimed properties with a semiconductor laser light source. While the prior art does describe optical fibers connected to GRIN lenses and that numerical apertures may be selected based upon a particular use, the prior art does not teach semiconductor lasers used with small NA's as claimed (see page 6 of Applicant's Remarks received March 21, 2007).
3. U.S. Patent No. 6,594,419 to Ukrainczyk et al. describes optical fibers connected to GRIN lenses and that numerical apertures may be selected based upon a particular use, Ukrainczyk et al. does not teach semiconductor lasers used with small NA's as claimed (see page 6 of Applicant's Remarks received March 21, 2007).
4. "Gradient-index rod lens with high N.A." by Yamagishi et al. describes a semiconductor laser with a GRIN lens having a numerical aperture with the claimed properties connected to a fiber. However, Yamagishi et al. describes a gap between the GRIN lens and the fiber. There is no suggestion or motivation to eliminate this gap by fusion-splicing the lens and fiber.
5. Claims 12-13, 17-20, and 30-31 are herein are deemed to patentably distinguish over and all other prior art of record.

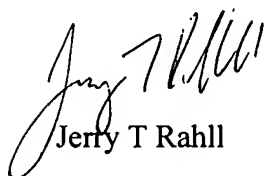
Conclusion


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. "Gradient-index lens for low-loss coupling of a laser diode to single-mode fiber" and "Laser-diode/Multimode-fibre Coupling Analysis Using a Planoconvex GRIN Lens" describe the use of GRIN lenses to couple lasers and fibers.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T. Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-F (9:00-5:00).

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jerry T Rahll


MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER
12/10/07